REMARKS

Claims 1-18 of the subject application are pending. Applicants have amended claims 2-10, 13, and 14. Applicants have not canceled any claims. Accordingly, claims 1-18 are presently being examined.

In view of the following discussion, applicants respectfully request that the Examiner reconsider and withdraw the rejections made in the outstanding Office Action.

Support for the Amendments

Applicants have amended independent composition claims 2-10, 13, and 14 in order to more clearly describe and distinctly claim the subject matter of applicants' amorphous form of 3-[2-(dimethylamino) ethyl]-N-methyl-1H-indole-5-methane sulfonamide succinate. Applicants have amended claims 2-10, 13, and 14 to correct certain minor procedural language.

These amendments to the claims are fully supported in the specification as originally filed, and thus no new matter is introduced by these amendments in accord with 35 U.S.C. § 132. Accordingly, applicants request entry of these amendments.

Foreign Priority Document

The Examiner states that this application claims the benefit of the foreign application, INDIA 594/MAS/2002 with a filing date 08/12/2002, but that a certified copy of the priority document has not yet been received. The Examiner has therefore not granted the priority and requests applicants to file the foreign priority document in the Patent Office.

Applicants are submitting concurrently herewith a certified copy of the priority document. Accordingly, the Examiner should grant applicants' priority date.

Rejection of Claim 2 under 35 U.S.C. § 112, second paragraph.

The Examiner has rejected claim 2 under 35 U.S.C. § 112, second paragraph, on the basis that claim 2 recites the limitation "Figure (1)". The Examiner argues that the claims must stand alone to define the invention and incorporation into the claims by express reference to the specification is not permitted. The Examiner states that incorporation of the values of X-ray powder diffraction of the amorphous form of sumatriptan succinate into the claim would obviate the rejection. Applicants traverse the Examiner's rejection.

One exception to the self-contained aspect of claims is found in the possibility to specifically refer to a figure or a drawing in a claim. This is done mainly where the drawing is a graphical representation and may be done in those instances where equivalent words are not available to express the limitation. See, e.g., *Ex parte Lewin*, 154 U.S.P.Q. 487 (P.O. Bd. App. 1966).

The Patent Office does accept compound claims, which are defined in terms of an X-ray powder diffraction pattern substantially as depicted in a Figure. An illustrative, but not exhaustive, list of examples of patents containing claims that are defined in terms of an X-ray diffraction pattern substantially in accordance with a Figure is set out below.

United States Patent No. 6,894,051 81, claim 16.
United States Patent No. 6,884,805 82, claims 18 and 37.
United States Patent No. 6,872,725 82, claims 5, 10, and 12.
United States Patent No. 6,831,091 82, claims 2, 6, and 10.
United States Patent No. 6,815,457 81, claim 11.
United States Patent No. 6,806,280 81, claim 6.

Hence, applicants' claim 2 does particularly point out and distinctly claim the subject matter, which applicants regard as the invention. Accordingly, the Examiner's rejection of claim 2 under 35 U.S.C. § 112, second paragraph, should be withdrawn.

Rejection of Claims 1-18 under 35 U.S.C. §103(a) as being unpatentable over *Winterborn et al.* in view of *Crisp et al.* or *Cheronis.*

The Examiner has rejected claims 1-18 under 35 U.S.C. § 103(a) as being unpatentable over EP 0496307 A1 (*Winterborn et al.*) in view of United States patent no. 4,820,833 (*Crisp et al.*) or "'Semimicro Experimental Organic Chemistry", 1958, Chapter 5, (*Cheronis).* The Examiner states that *Winterborn et al.* discloses 3-[2-(dimethylamino) ethyl]-N-methyl-1H-indole-5-methane sulfonamide succinate on page 2, lines 4-15, and Examples 3-6 on pages 3-4. The Examiner concedes that *Winterborn et al.* is silent regarding the amorphous or crystalline form of the instant compound.

The Examiner states that *Crisp et al.* discloses a process of purifying a compound in a highly pure amorphous form using solvents such as alcohols, nitriles, or water, *Crisp et al.* at columns 2-3, and 4, lines 15-18, 33-56, and states that amorphous forms of compounds have better bioavailability than crystal forms of compounds, *Crisp et al.* at columns 2-4. The Examiner states that *Cheronis* discloses methods for purifying solid compounds by crystallization. The Examiner concludes that that one of ordinary skill would find instant claims 1-18 *prima facie* obvious because one would be motivated to employ the compound of *Winterborn et al.* and the teachings of *Crisp et al.* or *Cheronis* to obtain amorphous forms of Sumatriptan succinate.

The Examiner maintains that *Cheronis* or *Crisp et al.* teach the choice of solvent, temperature, and concentration to obtain amorphous or crystal forms. The Examiner argues that the employment of a conventional modification for a known compound and process to obtain a pure amorphous form is considered *prima facie* obvious in the absence of unexpected results. The Examiner argues that the motivation to make the claimed amorphous form of a known pharmaceutically useful compound is derived from the expectation of obtaining a pharmaceutically useful benefit and therefore, absent a showing of unobvious and superior properties, the instant claimed amorphous form of a known compound would have been suggested to one skilled in the art. Applicants traverse the Examiner's rejections.

In summary, applicants' claims are not obvious over *Winterborn et al.* in view of *Crisp et al.* or *Cheronis* because *Winterborn et al.* is silent regarding amorphous forms of the instant compound and any method for making the compound, *Crisp et al.* merely discloses a process for preparing an amorphous form of cefuroxime axetil, and *Cheronis* teaches preparing crystalline compounds not amorphous compounds.

Applicants' claims provide an amorphous form of 3-[2-(dimethylamino) ethyl]-N-methyl-1H-indole-5-methane sulfonamide succinate (Sumatriptan succinate). The amorphous form is substantially in accordance with that characterized by an X-ray powder diffraction pattern of Figure (1). Applicants' claims further provide two (2) processes for the preparation of an amorphous form of 3-[2-(dimethylamino) ethyl]-N-methyl-1H-indole-5-methane sulfonamide succinate (Sumatriptan succinate).

The *Winterborn et al.* reference discloses 3-[2-(dimethylamino)ethyl]-N-methyl-1H-indole-5-methane sulphonamide. *Winterborn et al.* is not only silent regarding the amorphous or crystalline form of the instant compound but is also silent regarding any method for making the compound. *Winterborn et al.* merely discloses powder compositions containing the compound for intranasal administration.

The *Crisp et al.* reference discloses a process for preparing a substantially amorphous form of cefuroxime axetil. The process comprises preparing a solution of cefuroxime axetil in a solvent such as a ketone, alcohol, acetonitrile, tetrahydrofuran, dioxan, ester, or chlorinated solvent, and spray drying the solution to yield the substantially amorphous form of cefuroxine axetil. *Crisp et al.* does not teach or suggest the preparation of amorphous forms of any other compounds.

The *Cheronis* reference is merely a general textbook with a chapter discussing methods for purifying solids by crystallization. *Cheronis* only teaches preparing crystalline compounds and does not teach preparing amorphous forms of any compounds.

The existence of polymorphic forms of a compound, e.g., different crystalline forms, amorphous forms, and/or solvates, is rather important in the context of pharmaceutical science. This subject has been discusses in numerous publications, including the article by A. Goho, "Tricky Business," *Science News*, Vol. 166, pages 122-

123 (August 21, 2004), a website reprint of which is enclosed. This article discusses the current inability to predict either the existence or possible numbers of polymorphic forms for a given substance. Further, it is apparent that there is no standard method for proceeding toward preparing a new polymorphic form.

Amorphous compounds are noncrystalline compounds having no molecular lattice structure, which is characteristic of the solid state. The present invention provides an amorphous form of sumatriptan succinate, which is a non-hydrated, non-solvated, free flowing thermally stable solid; and hence well suited for pharmaceutical formulations. See applicants' specification at page 6, lines 1-4.

Applicants' claims provide a process for the preparation of an amorphous form of 3-[2-(dimethylamino) ethyl]-N-methyl-1H-indole-5-methane sulfonamide succinate (sumatriptan succinate), which comprises: a) heating to reflux an aqueous mixture of sumatriptan in a C_1-C_5 straight or branched chain alcoholic solvent; or in a nitrile solvent of formula RCN, wherein R is C_1-C_5 alkyl group; b) adding succinic acid to the mixture of step a); and c) adding a water immiscible aliphatic or alicyclic hydrocarbon solvent to the mixture of step b).

Applicants' claims further provide a process for the preparation of an amorphous form of 3-[2-(dimethylamino) ethyl]-N-methyl-1H-indole-5-methane sulfonamide succinate (sumatriptan succinate), which comprises: a) heating to reflux an aqueous mixture of sumatriptan succinate in a C_1-C_5 straight or branched chain alcoholic solvent; and b) adding a water immiscible aliphatic or alicyclic hydrocarbon solvent to the mixture of step a).

Winterborn et al. is silent regarding amorphous or crystalline forms of the instant compound and is also silent regarding any method for making the compound. *Crisp et al.* merely discloses a process for preparing a substantially amorphous form of cefuroxime axetil. *Cheronis* is a general textbook, which teaches preparing crystalline compounds but does not teach preparing amorphous compounds. The combination of *Winterborn et al.* in view of *Crisp et al.* or *Cheronis* does not teach or suggest applicants' amorphous form of 3-[2-(dimethylamino) ethyl]-N-methyl-1H-indole-5-

methane sulfonamide succinate (sumatriptan succinate) or methods for the preparation thereof.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck,* 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). MPEP 706.02(j)

The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp,* 227 USPQ 972. 973 (Bd. Pat. App. & Interf. 1985). MPEP 706.02(j)

Accordingly, the Examiner's rejection of claims 1-18 under 35 U.S.C. §103(a) as being unpatentable over *Winterborn et al.* in view of *Crisp et al.* or *Cheronis* should be withdrawn.

Obviousness of a composition or process must be predicated on something more than it would be obvious "to try" the particular component recited in the claims or the possibility it will be considered in the future, having been neglected in the past. *Ex parte Argabright et al.* (POBA 1967) 161 U.S.P.Q. 703. There is usually an element of "obvious to try" in any research endeavor, since such research is not undertaken with complete blindness but with some semblance of a chance of success. "Obvious to try" is not a valid test of patentability. *In re Mercier* (CCPA 1975) 515 F2d 1161, 185 U.S.P.Q. 774; *Hybritech Inc. v. Monoclonal Antibodies. Inc.* (CAFC 1986) 802 F2d 1367, 231 U.S.P.Q. 81; *Ex parte Old* (BPAI 1985) 229 U.S.P.Q. 196; *In re Geiger*

(CAFC 1987) 815 F2d 686, 2 U.S.P.Q.2d 1276. *In re Dow Chemical Co.* (CAFC 1988) F2d, 5 U.S.P.Q.2d 1529. Patentability determinations based on that as a test are contrary to statute. *In re Antonie* (CCPA 1977) 559 F2d 618, 195 U.S.P.Q. 6; *In re Goodwin et al.* (CCPA 1978) 576 F2d 375, 198 U.S.P.Q. 1; *In re Tomlinson et al.* (CCPA 1966) 363 F2d 928, 150 U.S.P.Q. 623. A rejection based on the opinion of the Examiner that it would be "obvious to try the chemical used in the claimed process which imparted novelty to the process does not meet the requirement of the statute (35 U.S.C. 103) that the issue of obviousness be based on the subject matter as a whole. *In re Dien* (CCPA 1967) 371 F2d 886, 152 U.S.P.Q. 550; *In re Wiaains* (CCPA 1968) 397 F2d 356, 158 U.S.P.Q. 199; *In re Yates* (CCPA 1981) 663 F2d 1054, 211 U.S.P.Q. 1149. Arguing that mere routine experimentation was involved overlooks the second sentence of 35 USC 103. *In re Saether* (CCPA 1974) 492 F2d 849,181 U.S.P.Q. 36. The issue is whether the experimentation is within the teachings of the prior art. *In re Waymouth et al.* (CCPA 1974) 499 F2d 1273, 182 U.S.P.Q. 290. The fact that the prior art does not lead one skilled in the art to expect the process used to produce the claimed product would fail does not establish obviousness. *In re Dow Chem. Co.* (CAFC 1988) 5 U.S.P.Q.2d 1529.

The provisions of Section 103 must be followed realistically to develop the factual background against which the Section 103 determination must be made. It is not proper within the framework of Section 103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary for the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The references of record fail to teach or suggest applicant's invention as a whole.

CONCLUSION

In view of the foregoing Amendment and Response, applicants request reconsideration pursuant to 37 C.F.R. §112 and allowance of the claims pending in this application. Applicants request that the Examiner telephone the undersigned attorney should the Examiner have any questions or comments, which might be most

expeditiously resolved by a telephonic or personal interview. No fee is believed necessary in connection with the filing of this Response. If any fee is required, however, authorization is hereby given to charge the amount of such fee to Deposit Account No. 50-3221.

Respectfully submitted,

Robert A. Franks
Reg. No. 28,605
Attorney for Applicants

18 July 2005

Dr. Reddy's Laboratories, Inc.
200 Somserset Corporate Blvd., Seventh Floor
Bridgewater, NJ US 08807-2862
Telephone: 908-203-6504
Facsimile: 908-203-6515